ABSTRACT OF THE DISCLOSURE

A low-resistance ITO thin film having a resistivity on the order of, or lower than $10^{-4}~\Omega$ cm, and a method for manufacturing such a film are disclosed. The ITO thin film is manufactured by depositing ITO on a crystalline substrate by pulsed laser deposition, low-voltage sputtering, oxygen cluster beam deposition, chemical vapor deposition, metal organic chemical vapor deposition atomic layer deposition, or molecule beam epitaxy.